Macrauchenia the roughened surface, (*b*. fig. 1, Pl. X.) commencing also at the outside, extends only one-third of the way across the articular surface: it is, however, as shallow as in the Camel. The articular surface on the anterior part of the base of the olecranon is broader in the Hippopotamus than in the Camel; but in the Macrauchene it is twice as broad as in the Hippopotamus. The size of the olecranon in the Macrauchene exceeds that of the Hippopotamus, and *à fortiori* that of the Camel: indeed in its general magnitude the Macrauchenia must have fully equalled the largest Hippopotamus; but it no doubt had a more shapely, and less broad and bulky trunk. The olecranon of the Macrauchenia differs in shape, both from that of the Camel and Hippopotamus; it terminates above in a three-sided cone with an obtuse apex; and presents a well marked protuberance at the outer side of the base, which is not present in either the Camel or Hippopotamus. There is also a strong rugged ridge on the back part of the olecranon which makes an angle before sinking into the level of the ulna below.

The confirmation of the close affinity of the Macrauchenia to the Pachydermatous Order, which the structure of the cervical vertebræ alone might have rendered very doubtful, is afforded by the bones of the right fore-foot (Pl. XI.); these are fortunately in so perfect a condition, as to make it certain that this interesting quadruped had three toes on the fore-feet, and not more; and that the fully developed metacarpal bones are distinct, and correspond in number with the toes, and are not anchylosed into a single cannon bone, as in the Ruminants. The bones preserved are the metacarpals, proximal phalanges, and middle phalanges of each of the three toes, and the distal phalanx of the innermost toe.

The proximal end of the innermost metacarpal bone presents three articular surfaces; the middle facet is the largest, and the two lateral ones slope away from it at an angle of 45°. The middle facet is broad and slightly convex in front, narrow and concave behind; the distal articular surface of the trapezoides must have corresponded with this surface; the outer facet is narrow, flat, extends from the fore to the back part of the head of the bone, and must have been adapted to a corresponding surface on the os magnum; the inner facet is the smallest, presents a triangular form, and is situated towards the back part of the head of the metacarpal bone; it indicates the existence of a rudimental metacarpal bone, or vestige of a pollex. Below the outermost of the lateral surfaces there is a crescentic articular surface with its concavity directed outwards and downwards (fig. 2, Pl. XV.), against which a corresponding convex articular surface of the middle metacarpal abuts, (fig. 3, Pl. XV.) External to this surface the proximal end of the middle metacarpal bone presents two articular surfaces for the carpus; the larger one, which was adapted to the os magnum, is horizontal, broad and convex before, narrow and concave behind; the outermost facet is a small triangular surface inclined downwards to the level of the articulating surface of the outermost metacarpal. It also presents a posterior vertical articular surface for a sesamoid bone. The proximal extremity of the outer metacarpal bone is joined to the middle metacarpal, not by one semilunar surface, but by two separate articulations of small size (fig. 4 and 5, Pl. XV.); it presents a single large slightly convex articular surface for the os magnum, of an irregular semicircular form, with the convexity of the curve turned outwards.

The metacarpus increases in breadth as it approaches the phalanges; the two lateral metacarpals bending slightly away from the middle one, and expanding towards their distal extremities: the middle bone presents a symmetrical figure except at its proximal extremity (fig. 2, Pl. XI.) The distal articulating facet of each of the metacarpal bones extends so far upon both the anterior and posterior surfaces as to describe more than a semi-circle (fig. 3, Pl. XI.); in the two lateral metacarpals it is traversed throughout by a longitudinal convex ridge dividing it into two equal lateral parts; the ridge is most produced on the posterior half of the joint (fig. 4, Pl. XI.): in the middle metacarpal this ridge subsides before it reaches the anterior part of the articular surface.

The proximal extremity of the middle proximal phalanx presents a posterior notch corresponding to the above partially developed ridge: the proximal extremities of the lateral phalanges are traversed by a middle longitudinal depression, and two lateral shallow concavities (fig. 6, Pl. XI.;) but these are of such an extent as to be in contact with only a part of the convexity above, which therefore was doubtless adapted to a sesamoid bone on each side of the longitudinal ridge. The structure of the above described joints proves that the motion of the toe upon the metacarpus was much freer and more extensive than in the Rhinoceros, which is the only existing Ungulate mammal which presents the tridactyle structure in the fore-foot. In this species the metacarpo-phalangeal articulations exhibit only a slight trace of the longitudinal ridges and grooves which are confined to the posterior part of the joint; these are more developed in the *Camelidæ*; but the Hog and Horse in this respect approach nearer to the Macrauchene, though the structure of the metacarpo-phalangeal joints in the Hog falls far short of the compactness and strength combined with freedom of play in flexion and extension which distinguish those of the Macrauchene. The *Palæotherium medium* most resembles the Macrauchene in the structure of the trochlear metacarpo-phalangeal joints; but both in this species,* and the *Pal. crassum*† the articular surface at the distal end of the metacarpal is relatively narrower than in the Macrauchenia; moreover all the species of the extinct Palæothere differ from the Macrau-

* See Ossem. Fossiles, Pl. XX. fig. 3.

† Loc. cit. Pl. XXII. fig. 6.